

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (canceled)

2. (currently amended) A method for detecting the presence of colonies of microorganisms in a sample, comprising the step of:

(a) preparing a light-permeable microorganism colony culture medium mixed with a sample;

(b) ~~illuminating said medium with coherent laser beam~~
pouring said microorganism colony culture mixture into
a transparent container cell;

(c) solidifying said microorganism colony culture in said container cell;

(d) illuminating said container cell and medium with a coherent laser beam;

(e) receiving the light projection generated by said colony culture medium with an image sensor;

(f) detecting the presence of colonies of microorganisms
~~being detected~~ by analyzing the projected image data obtained by

said image sensor after colonies grow large enough to create shades and the colonies block the laser beam to produce projected image data of the colonies on the image sensor.

3. (currently amended) A projection detecting system comprising:

(a) a loading portion of a transparent sample containing nonflowing cell container which contains a light permeable microorganism colony under observation;

(b) a coherent laser beam emitting source which illuminates the object placed on said loading portion; **and**

(c) ~~an image sensor which is~~ an array of light sensitive detectors; arranged to receive light projection generated by said object illuminated by said laser beam and providing ~~the~~ projected image data corresponding to each detector; and

(d) an illumination system which projects light from said laser beam emitting source onto an image sensor which consists of a beam expander placed between said laser beam emitting source and said loading portion.

4. (previously presented) The projection detecting system as described in claim 3 comprising:

(a) multiple loading portions capable of accommodating many of said transparent nonflowing cell containers under observation in a row;

(b) a coherent laser beam emitting source which illuminates through said transparent nonflowing cell containers placed on said loading portion; and

(c) an image sensor which is an array of light sensitive detectors, arranged to receive the compounded light projection generated by said transparent nonflowing cell containers illuminated by said laser beam and providing the projected image data corresponding to each detector.

5. (currently amended) The projection detecting system as described in claim 3 comprising:

(a) ~~a loading portion for a transparent nonflowing cell container which contains a microorganism colony under observation;~~

~~(b)~~ three coherent laser beam emitting sources which illuminate said transparent nonflowing cell container placed on said loading portion from X, Y and Z direction which are perpendicular to each other; and

~~(c)~~ (b) three image sensors which are an array of light sensitive detectors, arranged to receive the light projection

generated by said object illuminated by said laser beams from X, Y and Z direction respectively and providing the projected image data corresponding to each detector as X, Y and Z image data.

6. (previously presented) The projection detecting system as described in claim 3 comprising:

(a) a loading portion which holds a transparent nonflowing cell container which contains a microorganism colony under observation and is capable of rotating said object with constant angular velocity around center axis that passes through the center of said object;

(b) a coherent laser beam emitting source which illuminates from the direction perpendicular to the axis of rotation.

7. (cancel)

8. (new) The method of detecting colonies of microorganisms in accordance with claim 2, wherein the container cell is cylindrical.

9. (new) The method of detecting colonies of microorganisms in accordance with claim 8, comprising the step of rotating the

container cell with constant angular velocity around a center axis that passes through the center of said object.

10. (new) The method of detecting microorganisms in accordance with claim 2, wherein the container cell is rotated about an axis that passes through a center of the container cell when illuminated with the laser beam.

11. (new) The method of detecting microorganisms in accordance with claim 2, wherein the presence of microorganisms is detected before colonies overlap each other.

12. (new) The method of detecting colonies of microorganisms in accordance with claim 2, further comprising the step of detecting a number of colonies to express a level of contamination in a food stuff.

13. (new) The method of detecting colonies of microorganisms in accordance with claim 2, further comprising the step of allowing said colonies to grow large enough to produce image output data on an image detector having an area greater than one micron in size.

14. (new) The method of detecting colonies of microorganisms in accordance with claim 2, further comprising the step of detecting all microorganism colonies in the path of the laser beam regardless of depth of location by projecting a colony image directly onto the image sensor.

15. (new) The method of detecting colonies of microorganisms in accordance with claim 2, further comprising the step of staining said colonies with triphenyltetrazolium chloride.

16. (new) The projection detecting system as described in claim 3, wherein said beam expander consists of a concave lens and a convex lens.